

An Essay
on
Variola

Respectfully submitted
to the faculty
of the
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This is one of the eruptive diseases enumerated among the diseases classed as fevers. It is supposed by some to have been introduced first into Europe and Asia at a period during the middle ages: and by others of as good authority that the first description of this disease is found in the works of the Arabians, and supposed to have originated in Africa. - Rhazes describes this disease as existing there in the 10th century. - Small pox is distinguished into classes, distinct and confluent small pox. Distinct when the pustules are even distinct

and separated from each other leaving
an intervening red space; and con-
fluent where they coalesce forming a
continuous whole or flacid and irreg-
ular. the intervening red spaces be-
ing pale.

As I have stated
it is classed into two varieties. Yet
Hartman and other authors of the best
authority give us a distinction of thir-
teen varieties. I will not recount ~~these~~
these varieties. They only serve to perplex
and mislead the mind of the young student
whilst a more simple classification gives
us at one glance the varieties sufficient-
ly accurate for the treatment of the
disease.

This loathsome disease
sets in suddenly with chilliness followed
by hot dry skin. hard quick pulse. pain

in the epigastrium and small of the
back: headache nausea and vomiting
and sometimes delirium

The precursory stage of this disease con-
tinues with increasing fever every evening
for two or three days. but may last
longer in persons of delicate constitutions

The eruption first appears on the face
and neck. afterwards on the back
chest and upper extremities: it makes
its appearance on the third or fourth
day as a small inflamed red stigma or
lump distinguishing this eruption from
all other exanthemata: Although

there are objections to this as a specified
rule especially that of the confluent
form: as in this the eruption generally
comes out earlier and more confusedly:

the pimples being so minute and crowded together it forms a redness of the whole surface which is hardly distinguishable from scarlet fever or erysipelas.

Cases almost without number have been cited where doubts have been entertained during the first appearance of this eruption and still our most eminent and observing men are struck by the similarity between measles and small pox, and cannot with certainty decide until the third day of the appearance when the pustules begin to contain a little fluid and a depression in the centre of them is beginning to be seen growing dark as the disease progresses.

When small pox pustules are fully formed ^{they} it cannot be mistaken ~~for~~ for any other

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disease: the pustules gradually ripen and generally on the eighth day begin to burst and discharge a yellow purulent matter which dries forming crusts and scales or shivers and dries up changing from a yellow to a brown or blackish color: and especially to the latter on the feet: though in the confluent form the pustules are rarely if ever of the same yellow color being at first of a whitish and then of a brown color and sometimes of a bluish or purplish hue

In many cases the pustules form in the face before the stigmata make their appearance on the feet: owing to the eruption first making its appearance on the face and on the feet last: and each pock has its stage of incubation to run

which lasts generally twelve days: some-
times however from eight to fourteen
days.

On or about the twelfth
day the scabs and crusts begin to fall off,
unless the pustules were prematurely broken
by mechanical means, as by scratching
when they will crust and fall off earlier.

The severity of this disease is generally in
proportion to the extent of the eruption.
If there be but a few pustules in a given
case "variola discreta" there will not be so
much of the surface covered and the inflam-
-mation must necessarily be less than in
"variola confluenta" where the pustules
numbering many thousands cover the
surface almost wholly thus frequently
causing erysipelas. And again
the number of pustules indicate the

amount of variolous poison in the system. thus giving to the confluent form more danger by having many times more poison in the blood

The face is swollen and often to so great a degree that the eyelids are closed and the face appears like a solid cake of pustula infection

When the scabs or crusts fall off it leaves the skin of a deep red or purplish hue which in the course of weeks fades to a natural and healthy color leaving a depression or pit which ever after exists.

On the coming out of ~~out of~~ the eruption the fever subsides - as also the pain in the loins, back and head, and come on again on the seventh day of the eruption

But it only lasts a day or two and re-
-occurs on the twelfth. This is very
light in the distinct form. but in the
confluent it is very severe and danger-
-ous

According to Dr Gregory
one sixth of all such cases die on the
eleventh day. His statistics are as fol-
lows. Out of 168 cases, 27 died on the
eighth day of the eruption:

32 died in the first week
99 " " " " second "
21 " " " " third "

thus making the second week prove
the most fatal; and in the third
owing to the late appearance of the
eruption the patient gradually sinks
from the large amount of suppres-
sive inflammation and ir^mitation

of the surface. Or complicated with it may be typhoid, gastric and other symptoms which tend to make this dreadful disease more fatal.

Although I have given a description of the disease and its progress to a termination. yet no two cases are alike and every patient has his peculiar type of difference in some one or all the different stages of the disease.

But it will be well here to speak particularly of the typhoid and putrid form of this disease as being the worst and most dangerous.

When there is great redness and inflammation of the skin accompanied with debility, delirium, pain in the back, loins &c we may anticipate

a severe attack and suspect the typhoid form: which if not checked will suddenly bring on the putrid character: this may be known by the dark color of the pustule as it advances toward suppuration: the contents being dark blood or bloody matter instead of white matter or yellow pus. This is owing to a decomposition of the blood by its containing an excess of the variolous poison: and is very dangerous, and more especially if collapse sets in and the patient sinks seemingly without life and animation.

There is no disease so contagious as small pox: and it is asserted that no one liable to the small pox can associate in a room with a patient ^{ill} of this

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disease without receiving the infection.

I differ from this opinion.

It may be communicated in a number of ways: by breathing the atmosphere contaminated with this disease, handling clothing: by inoculation &c.

It is supposed by some authors that small pox pustules occur upon the mucous membrane of the intestinal canal, others disbelieve or do not credit the idea asserting that the small pox pustule cannot exist upon any mucous membrane where there is a continual moisture which is not freely exposed to the air.

For instance pustules do not form on the inner side of the eyelid except in cases

of ectropium: only on that portion
of the glans penis which is not cov-
ered by the prepuce and only on that
portion of the anus which protrudes
in hemorrhoids; and some have
even denied their existence upon
the fetus in utero. But here
they are most certainly mistaken.
In almost numberless cases where
pregnant women have taken the
disease it has caused abortion, and in
severe cases death to the mother.
Cases have been noted where the child
at birth was covered with pustules;
and others where the pits and scars
remained to be seen at birth.

Several cases are on record where women
who had had the small pox became

pregnant. nursed a patient in
the disease and gave birth in due
^{time}
~~recovery~~ to a full grown healthy
child well marked with the pits of
small pox. without the least incon-
venience to the mother: she not
even mistrusting that this loathsome
disease could be within preying upon
the little frame of that living form
yet unborn: And what a blessing
it is in such a case that the mother
should be kept ignorant of the fact:
her own body being as she believes
proof against the disease. she will of
course keep up good spirits and en-
joy health while the little suffers
within its closed home could it be
seen would present a frightful as-

fect and cause an immediate change
in the mother's feelings to the immi-
nent peril of both mother and child:
but as long as she is kept ignorant
of the change within, she can but expect
and is well assured that all is well and looks
forward with the same bright hopes,
congratulating herself that she has pas-
sed thus far without the least incon-
venience from any source.

But why should it not have caused
abortion in this case, as well as in those
where the mother is having the disease?
Simply because the child is receiving
nourishment from the body of a healthy
mother; a double healthy action com-
bating the one principle^{al} disease have
a tendency to overpower the disease.

and continue the healthy action.

Several such cases as above mentioned have been inoculated without effect:

this also brings a fair proof that the small pox pustule may form upon the fetus in utero and pass through the stages of ^psupuration and desquamation: thereby breaking down all the arguments used to convince us that such a thing could never be. Thus showing that this

rule is not strictly true "that where there is a continual moisture or the air is not frequently admitted on a mucous membrane there can be no small pox

pustules: And yet they say the enlarged follicles put on very much the same appearance of pustules and also cite a case where the pustule at full height were.

discovered as low down the trachea as
the third ring; and in many cases
where suppuration has followed the
eruption by affecting the air passages.
One might argue that this was from the
inflammation of the mucous membrane
caused by inhaling the contaminated at-
mosphere; but why not a suppuration
since air is a frequent visitor to the parts;
but then again it is proved that air is not
necessarily wanted to form a pustule since
the fetus in utero may pass through the
whole stages of this disease and come into
the world proving to us its security against
the disease: And that the pustule can-
not exist on a mucous membrane where
there is a continual moisture is not
true. For the same reason that

they are found on the fetus and in almost every case especially of the confluent form, we see pustules on the mucous membrane of the lips cheeks and throat. Among the many accompanying diseases and complications we find erysipelatous inflammation, glandular swellings in the groins and axilla sometimes going on to suppuration: sores on the hips and scrotum and in some cases the large joints after death have been found to be full of matter: Abscesses are sometimes formed: and as I have before mentioned inflammation of the air passages causing in severe cases of the confluent form suffocation. Diarrhoea, if allowed to run to excess and cause too much depletion is considered a dangerous symptom -

In some cases of small pox during the
suppurative stage we may see numerous fresh
vesicles starting up on the parts which have
not been occupied by the pustule, when this
occurs it is considered as unfavorable; also
when a chill occurs during the suppurative
stage; sometimes a collapse will occur dur-
ing the first stage of the eruption: the pap-
illae flatten, lose their bright color and the
extremities of the patient appear cold

When this happens active treatment should
be had recourse to as it generally proves fatal.
Small pox is most dangerous when it
occurs in persons of plethoric enfeebled and
scrofulous constitution and especially when
it takes on the typhoid and putrid char-
acter. Watcay's hemorrhage from the
uterus is not uncommon.

Among the sequelae of this disease are blindness caused by ulcers on ^{the} cornea. the accumulation of pus between the lamellae of the cornea &c.; deafness sometimes follows; abscess and ^{also} ichorous ~~the~~ ulcers: many of which have been hard to cure; and as I have said before pus has been found in the joints and sockets of some of the larger bones. Caries, anchylosis and necrosis may likewise occur, but these latter have seldom been found to exist. Neurotic conditions, epilepsy, ~~idiocy~~ &c may follow.

On the other hand many other affections are effaced and many malignant diseases are warded off by taking this disease. Inoculation has long been known to ~~ex-~~ being on the small pox in a lighter form than when taken by the natural way (ie)

by inhaling the contaminated atmosphere
and the duration is much shorter.

Why it should be so I do not know un-
less it is considered the quantity introdu-
ced under the cuticle is much less than when
the contaminated atmosphere is breathed
exposing a greater extent of surface (and that
too of mucous surface) to the poisonous influ-
ence of the miasm. And if this be the
case why does it come to maturity sooner and
not in any way so dangerous: simply be-
cause the particle introduced beneath the
cuticle comes quickly in contact with the
healthy blood which carries it on on its course
through the system to be rejected and thrown
out as soon as possible: and not as in the
natural way carried through a mucous mem-
brane to wind its way as a canker laying

hold of the system with renewing strength
the slower it progresses. This doctrine

holds good in nearly all the exanthemata.
For all practitioners agree that they had rather see
the eruption and fever quite violent at first
than backward and slow in their develop-
-ment in any of these diseases.

The source from whence the practice came
cannot be ascertained. Though it is said to
have been practiced in India "time out of
mind", and was certainly practiced in Turkey
during the last century.

It is estimated one out of six hundred
die from this disease while one out of five
die from the disease taken in the natural
way.

In 1713 it caused quite a
sensation in Adrianople and in 1718 it
was introduced into Great Britain where

its popularity spread so rapidly that in a few years thousands had been inoculated with the greatest success. One great objection

to this practice is that it is as contagious as the natural small pox, and that the contagion produced is as severe, and is by some considered to be the small pox itself.

But this is now done away and a better and far more superior practice has taken its place: I allude to vaccination; or the introduction of the vaccine virus taken from the pustule formed on the cow known as cow pox virus. Dr Jenner discovered that the pustule formed by the introduction of the cow pox virus on the skin was similar to that of small pox, and which being transmitted to others by subsequent vaccination produced the same

effect. This practice was heralded with great applause through the country and in the course of six years was known in all parts of the world. The disease following vaccination (vari^{ol}oid) is much lighter than the inoculated and a postiori, to the natural small pox.

Vaccination produces but one pustule which begins to be seen on the third day after the insertion of the virus into the arm as an inflamed pimple; on the fifth day the vesicle is plainly seen which continues to fill and enlarge to a quarter or half an inch in diameter; on the eighth day slight fever is manifested which soon subsides; after this a brown crust begins to form over the vesicle which continues growing harder till about the twelfth day.

when the crust falls off leaving a cicatrix
slightly depressed with pits

Although Jenner ^{or} thought at first he had
found a specific against small pox he was
disappointed as he afterwards found that many
who had been vaccinated had taken the dis-
ease but in a modified form known as
varioloid. It is of itself contagious and
considered not dangerous, yet patients have
died with this disease.

Vaccination is now practiced in all civ-
ilized countries, and inoculation laid aside
except in urgent cases where vaccine virus
cannot be obtained and where a person
has been exposed to the small pox: in
such a case only is inoculation expedient
or justifiable, for it not only transmits
a contagious disease, and one that leaves its

mark on the fair face. but it is a comparatively dangerous one.

In some cases of this kind vaccination will do as well and better if performed before the fifth day after exposure, modifying the disease to varioloid.